



## NATIONAL SCIENCE FOUNDATION

### Notice of Intent to Seek Approval to Establish an Information Collection

**AGENCY:** National Science Foundation.

**ACTION:** Notice and request for comments.

**SUMMARY:** The National Science Foundation (NSF) is announcing plans to request approval for the collection of research and development data through the Directorate for Computer and Information Science and Engineering Research Experiences for Undergraduates Sites and Supplements Evaluation. In accordance with the requirement of the Paperwork Reduction Act of 1995, we are providing opportunity for public comment on this action. After obtaining and considering public comment, NSF will prepare the submission requesting that OMB approve clearance of this collection for no longer than 3 years.

**DATES:** Written comments on this notice must be received by [INSERT DATE 60 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER] to be assured of consideration. Comments received after that date will be considered to the extent practicable.

**FOR ADDITIONAL INFORMATION, CONTACT:** Suzanne H. Plimpton, Reports Clearance Officer, National Science Foundation, 2415 Eisenhower Avenue, Alexandria, VA 22314; or send email to [splimpto@nsf.gov](mailto:splimpto@nsf.gov). Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339, which is accessible 24 hours a day, 7 days a week, 365 days a year (including federal holidays).

### **SUPPLEMENTARY INFORMATION:**

*Title of Collection:* Computer and Information Science and Engineering Research Experiences for Undergraduates Sites and Supplements Evaluation.

*OMB Approval Number:* 3145-NEW.

*Expiration Date of Current Approval:* Not applicable.

*Type of Request:* Intent to establish an information collection.

*Abstract:* Every year the National Science Foundation (NSF) funds hundreds of Research Experience for Undergraduates (REU) activities through its REU program. The Directorate of Computer and Information Science and Engineering (CISE) is seeking to evaluate the effectiveness of the CISE REU program.

The REU program provides undergraduate students at US higher education institutions with opportunities to work with faculty on a research project. They can take the form of REU Sites or REU Supplements. REU Sites are based on independent proposals to initiate and conduct projects that engage a number of students in research. REU Supplements are included as a component of proposals for new or renewal NSF grants or cooperative agreements or may be requested for ongoing NSF-funded research projects.

By offering this opportunity to undergraduate students, the REU program seeks to expand student participation in all kinds of research — both disciplinary and interdisciplinary — encompassing efforts by individual investigators, groups, centers, national facilities, and others. The REU experience integrates research and education to attract a diverse pool of talented students into careers in science and engineering, including teaching and education research related to science and engineering.

The current data collection project intends to measure the impact of the undergraduate REU Sites and REU Supplements programs sponsored by NSF CISE. The project will conduct online surveys to track NSF CISE REU participants over time – including pre-program, post-program and one-year post-program measurement -- alongside two comparison groups: (1) students

participating in other undergraduate research, and (2) students who do not participate in research. The researchers will supplement REU participants' survey data with demographic and background information collected via the NSF Education and Training Application (ETAP). The evaluation and research questions guiding this project include the following:

1. Who are the students reached through the NSF REU Program, and how do they compare to students participating in other types of research experiences and to students in the broader CISE community?
2. How do CISE REU Sites and REU Supplements differ from other research experiences (e.g., other REUs, internships, and independent research projects)?
3. To what extent are the goals of the NSF REU Program being met by the individual projects within the program, including recruitment and retention of students in science and engineering fields and increasing diversity in these fields?
4. In what ways does participation in REU Sites, REU Supplements, internships, and/or other independent research experiences impact student attitudes and pathways to CISE careers and other research experiences?
5. In what ways does participation in the REU Sites and REU Supplements impact recruitment and retention of students who are underrepresented in computing?

Ultimately, the findings from this data collection will be used to understand and improve the impact of the CISE REU program, including increasing

recruitment and retention in science and engineering and promoting a diverse group of computing/STEM careers.

*Use of the information:* The information collected through this survey will be used to evaluate the NSF CISE REU Program.

*Respondents:* There will be three types of survey respondents: NSF CISE REU Site and Supplement participants, a comparison group of undergraduate students who participate in other, non-NSF REU research experiences, and a comparison group of undergraduate students who do not participate in research.

NSF CISE REU participants will include undergraduate students who participate in REU projects in which the project's Principal Investigator chooses to use NSF-sponsored program evaluation services. Participants from the two comparison groups will be identified and recruited from a pool of undergraduates in computing fields who have participated in a prior survey of the Computing Research Association and have agreed to be contacted for future data collection.

*Estimated number of respondents:* The study's data collection activities will occur over a span of 2 1/3 years. It is estimated that during this time, there will be approximately 3,500 NSF CISE REU survey respondents and 6,000 comparison group survey respondents, for a total of 9,500 respondents.

*Average time per reporting:* Each online survey is designed to be completed in 20 minutes or less.

*Frequency:* Each NSF CISE REU participant will be asked to complete three surveys: (1) a pre-test before they begin their REU project; (2) a post-test, after their REU ends; and (3) a one-year follow-up survey. Within the data collection timeline for this project, this will allow for two full data collection cycles, plus a third subset of Year 3 summer REU participants who will only complete a pre-test and a post-test, but no follow-up survey. Each comparison group participant,

including both those with a different research experience and those with no research experience, will be asked to complete a pre-test survey and a follow-up survey occurring approximately one year later. There will be two full data collection cycles for comparison group participants.

*Estimate burden on the public:* For REU participants, there will be two full cycles of data collection (pre-test, post-test, and follow-up) and one partial cycle. It is expected that a total of 3,500 REU respondents will complete a 20-minute pre-survey in the project. Of these 3,500 REU participant respondents, we expect that approximately 70%, or 2,450, will complete a 20-minute post-survey. For the follow-up survey, only the REU participants from the first two years of the data collection would be able to complete the survey within the time range of the study (N = 3,000). It is expected that approximately 50% of these respondents, or 1,500, will complete a 20-minute one-year follow-up survey. This would result in a total of 7,450 20-minute surveys completed by REU respondents, for a total of 2,483 burden hours for this subset of respondents

For comparison group participations, there will be two full cycles of data collection. It is expected that a total of 6,000 respondents will complete a 20-minute pre-survey in the project. Of these 6,000 comparison group respondents, approximately 50%, or 3,000, are expected to complete a 20-minute one-year follow-up survey.

The total estimate for this collection is 9,000 surveys completed by comparison group respondents, for a total of 3,000 burden hours. Together, the total estimated survey burden for the project is 5,483 hours. The calculations are shown in Table 1.

**Table 1. Estimated Survey Burden**

<b>Category of Respondent</b>	<b>Number of Year 1 Responses</b>	<b>Number of Year 2 Responses</b>	<b>Number of Year 3 Responses (Partial Year)</b>	<b>Participation Time</b>	<b>Burden</b>
REU participant Pre-survey	1,500	1,500	500	20 mins each	1166.67 hours
REU participant Post-survey (70% of original)	1,050	1,050	350	20 mins each	816.67 hours
REU participant Follow-up survey (50% of original)	750	750	Not conducted	20 mins each	500 hours
Comparison participant Pre-survey	3,000	3,000	Not conducted	20 mins each	2,000 hours
Comparison participant Post-survey (50% of original)	1,500	1,500	Not conducted	20 mins each	1,000 hours
<b>Total surveys completed</b>	<b>7,800</b>	<b>7,800</b>	<b>850</b>	<b>20 mins each</b>	<b>5,483 hours</b>

**COMMENTS:** Comments are invited on:

1. Whether the proposed collection of information is necessary for the evaluation of the CISE REU Sites and Supplements Program
2. The accuracy of the NSF's estimate of the burden of the proposed collection of information
3. Ways to enhance the quality, utility, and clarity of the information on respondents, including through the use of automated collection techniques or other forms of information technology

Dated: September 1, 2021.

**Suzanne H. Plimpton,**

*Reports Clearance Officer,*

*National Science Foundation.*

